

Claims

1. A storage area network (SAN), comprising:

a plurality of digital data processors, each having a file system that effects access to one or more storage devices coupled to the SAN, and

a process in communication with the digital data processors,

the process responding to a notification on behalf of at least a selected one of the digital data processors for extension of the file system in accord with a hierarchically defined file extension policy.

2. The SAN of claim 1, wherein

the process responds to a file system notification on behalf of the selected digital data processor in accord with a policy defined, in part, for a first group to which that digital data processor belongs and, in part, for a second group to which that digital data processor belongs,

the first group being at a first hierarchical level and the second group being at a second hierarchical level, where the first level is hierarchically above the second level and where the first group includes digital data processor(s) in the second group as well as at least one digital data processor other than the selected digital data processor..

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β. The SAN of claim 1, wherein

the first group is associated with a first set of plural attributes defining a default policy for digital data processors included in that group and wherein the second group is associated with a second set of one or more attributes, each corresponding to and overriding an attribute in the first set, where the attributes of the second set, taken in conjunction with non-overridden attributes of the first set, define a policy for the second group,

the process responds to a notification for file extension on behalf of the selected digital data processor in accord with a policy defined for the second group.

4. The SAN of claim 2, wherein the attributes can identify any of a utilization threshold above which file system extension is requested, one or more storage devices accessible for file system extension, a range of storage capacities for accessible storage devices to be assigned for file system extension, maximum file system size, and a flag indicating whether file system utilization is monitored.

5. The SAN of claim 4, wherein the attributes further includes an alert interval for notifying a SAN administrator of a file system utilization exceeding a threshold since a previous notification.

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6. The SAN of claim 2, wherein a database coupled to the process stores the attributes.

7. The SAN of claim 2, wherein the digital data processor other than the selected digital data processor belongs to a third group at the second level.

8. The SAN of claim 2, wherein the digital data processor other than the selected digital data processor belongs to a third group at a hierarchical level lower than the second level.

9. The SAN of claim 2, wherein the digital data processor other than the selected digital data processor belongs to a third group at a hierarchical level higher than the second level.

10. A storage area network (SAN), comprising:

a plurality of digital data processors, each having a file system that effects access to one or more devices coupled to the SAN, each digital data processor belonging to a first and a second processor groups in a set of hierarchically related groups, the first processor group being at a higher level than the second processor group and being associated with a defined default file system extension policy for processor groups at the level of the first processor group or a lower level, and the second processor group inheriting at least a portion of the default policy and overriding the remainder of the default policy,

a process in communication with the digital data processor,

the process responding to a notification on behalf of a selected one of the digital data processors for file system extension by assigning one or more storage devices to the selected data

processor in accord with a file extension policy defined for the second group to which the selected digital data processor belongs.

11. The SAN of claim 10, wherein the default file extension policy defines a plurality of attributes for file system extension.

12. The SAN of claim 11, wherein the defined attributes can identify any of a utilization threshold above which file system extension is requested, one or more storage devices accessible for file system extension, a range of storage capacities for accessible storage devices to be assigned for file system extension, maximum file system size, and a flag indicating whether file system utilization is monitored.

13. The SAN of claim 10, wherein the process executes on one of the digital processors.

14. The SAN of claim 13, wherein the selected digital data processor and the storage devices assigned thereto communicate via an interconnect fabric.

15. The SAN of claim 14, further comprising a plurality of agents each associated with one of the digital data processors for communicating file extension notifications to the process.

16. In a storage area network (SAN) comprising one or more digital data processors and one or more storage devices, each having a file system that effects access to one or more of the storage devices, a method for extending the file systems of the processors, comprising:

assigning a selected one of the digital data processor to a first group associated with a default policy for file system extension,

assigning the selected digital data processor to a second group hierarchically related to the first group at a lower level, the second group inheriting at least a portion of the default policy and overriding the remainder of the default policy,

extending the file system of the selected digital processors, in response to a notification therefrom, in accord with the policy defined for the second group.

17. The method of claim 16, further comprising selecting the policy to define a plurality of attributes for file system extension.

18. The method of claim 17, wherein the attributes can be any of utilization threshold above which file system extension is requested, one or more storage devices accessible for file system extension, a range of storage capacities for accessible storage devices to be assigned for file system extension, maximum file system size, and a flag indicating whether file system utilization is monitored.

19. The method of claim 16, further comprising assigning another one of the digital data processors to the first group and to a third group hierarchically related to the second group at a

lower level, the third group inheriting at least a portion of the policy defined for the second group and overriding the remainder of the policy.

20. The method of claim 16, further comprising assigning another one of the digital data processors to the first group and to a third group hierarchically at the same level as the second group, the third group inheriting at least a portion of the policy defined for the first group and overriding the remainder of the policy to define a file extension policy that is at least partially different from the policy defined for the second group.

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